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EXAMINER

KILKENNY, TODD J

ART UNIT PAPER NUMBER

1733

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/744,149

Applicant(s)

BECHER ET AL.

Examiner

Todd J. Kilkenny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18 – 22, 24, 25, and 37 - 41 rejected under 35 U.S.C. 102(b) as being anticipated by Cook (US 3,938,266).

Cook discloses an adhesive system whose bond may be selectively destroyed or weakened by chemical action.

As to independent claim 18, referring to Figure 2b, Cook discloses destroying an adhesive bond by releasing solvent into the adhesive, said solvent by chemical action, breaks the bond of the adhesive material (Col. 3, lines 10 – 18). As to applicant's claimed polymeric adhesive component comprising at least one of polyurethane, polyurea or epoxy resins, it appears Cook's teaching is generic towards any adhesive of high adhesive strength which forms permanent bonds and in disclosing the example of the shoe product field, Cook positively suggests an epoxy resin (Col. 3, line 21 – Col. 4, line 3).

As to claims 19, 21 and 22 as depicted in Figure 2b, the solvent (22) is admixed in the adhesive and the solvent is encapsulated in capsules (24).

As to claims 20, 24 and 25 referring to Figure 3, Cook discloses applying electromagnetic radiation to the adhesive, which provides energy to metal particles (20)

admixed within the adhesive (Figure 2a), which in turn serves to heat the capsules to release the solvent encapsulated therein.

As to claim 37, Cook discloses a process breaking down an adhesive bond between articles by employing the adhesive system described above, wherein as an example said articles are suggested as being a shoe upper and shoe sole and wherein the bond is broken down between the articles by providing electromagnetic radiation to the adhesive such that the shoe upper and shoe sole can be separated.

As to claims 38 – 41, the deactivation as suggested by Cook includes providing electromagnetic radiation to the adhesive which acts to energize metallic particles mixed therein, which in turn produces heat to melt the capsules (24), which in turn releases the solvent.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 26, 28, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Tesoro et al (US 4,882,399).

As to claims 26 and 28, Cook anticipates chemically breaking down an epoxy resin with a solvent, but fails to provide any suggestion as to solvents employed.

Tesoro et al teach an epoxy resin having reversible crosslinks and suggest employing a solvent to break the adhesive bond of the epoxy resin. Tesoro et al suggest preferred solvents are inert, polar organic compounds and positively disclose dimethyl acetamide as one of a plurality of choices (Col. 6, lines 38 – 50).

It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to employ an organic amine, such as dimethyl acetamide as the solvent in Cook in view of Tesoro et al teaching said organic amine a one of a plurality of suitable solvents capable of chemically breaking down epoxy resins.

As to claims 34 and 35, Cook suggest an epoxy resin system, but fail to suggest said system to include a structural component chemically attached to the adhesive component, wherein the chemical reaction occurs with the structural component in breaking down the adhesive.

As further evidenced by the epoxy resin of Tesoro et al, the epoxy resin employed to be broken down through a solvent includes a crosslinking agent containing two or more epoxy-reactive groups and further containing a disulfide bond, wherein said disulfide bond is cleaved by reduction in the presence of the solvent (Col. 4, line 34 – Col. 6, line 32). Said crosslinking agent is taken to read on applicant's claimed structural component.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the epoxy resin system of Tesoro et al as the epoxy resin suggested by Cook, wherein the epoxy resin system of Tesoro et al includes a

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crosslinking agent defining a disulfide bond which reads on applicant's claimed structural component and only the expected results would be achieved.

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Tesoro et al (US 4,882,399) as applied to claim 28 above, and further in view of Moriwaki et al (US 4,938,900).

Cook suggests capsules (24) for encapsulating the solvent (22), but fails to positively suggest forming the capsule from an organic amine.

Moriwaki et al teach a method for the preparation of microcapsules wherein the microcapsules comprise capsule walls formed from a reaction product of an amino resin and a partially hydrolyzed copolymer of styrene and malice anhydride. Said reaction product offers a capsule having greatly improved resistance against heat and solvents.

It would have been obvious to one of ordinary skill in the art at the time of invention to construct the capsule of Cook so as to comprise amino resin, as suggested by Moriwaki et al as such microcapsules provide improved resistance against solvents and heat.

6. Claims 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Afzali-Ardakani et al (US 5,560,934).

Cook anticipates chemically breaking down an epoxy resin with a solvent, but fails to provide any suggestion as to solvents employed.

Afzali-Ardakani et al teach a cleavable diepoxide for removable epoxy compositions and disclose destroying epoxy resin compositions through exposure to special solvent. Said solvents taught by Afzail-Ardakani et al include organic acids (Col. 7, lines 34 – 49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ an organic acid as the solvent in Cook in view of Afzali-Ardakani et al suggesting organic acids are known solvent materials for breaking down epoxy resin compositions. One of ordinary skill in the art would have been motivated to use organic acids as they are compatible with manufacturing and environmental concerns as disclosed by Afzali-Ardakani et al.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Afzali-Ardakani et al (US 5,560,934) as applied to claims 30 above, and further in view of Moriwaki et al (US 4,938,900)

Cook suggests capsules (24) for encapsulating the solvent (22), but fails to positively suggest forming the capsule from an organic amine.

Moriwaki et al teach a method for the preparation of microcapsules wherein the microcapsules comprise capsule walls formed from a reaction product of an amino resin and a partially hydrolyzed copolymer of styrene and malice anhydride, which offers a capsule having greatly improved resistance against heat and solvents.

It would have been obvious to one of ordinary skill in the art at the time of invention to construct the capsule of Cook so as to comprise amino resin, as suggested

by Moriwaki et al as such microcapsules provide improved resistance against solvents and heat.

8. Claims 23, 26 – 28, 30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of the Admitted Prior Art (specification, page 3, line 40 – page 4, line 7).

Cook anticipates chemically breaking down an epoxy resin with a solvent, but fails to provide any suggestion as to solvents employed.

As appears to be admitted by applicant, methods of deactivation of an epoxide backbone include cleaving with an organic amine or organic acid are known, wherein the organic amine may be complexed in a metal halide complex, preferably lithium bromide or sodium chloride as is known in the synthetic chemistry field (specification, page 3, line 40 – page 4, line 7).

Therefore, as to claims 23, 26, 28, 32 and 33, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an organic amine and to incorporate lithium bromide or sodium chloride with the organic amine as the solvent of Cook in view of Cook's silence as to examples of appropriate solvent and in view of the admitted prior art suggesting organic amines incorporated with metal halide complex are known deactivators of epoxide backbones in the synthetic chemistry field.

As to claims 27 and 30, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an organic acid as the solvent of Cook in view of Cook's silence as to appropriate solvent examples and in view of the admitted prior



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art suggesting organic acids are known deactivators of epoxide backbones in the synthetic chemistry field.

9. Claims 34 – 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Tesoro et al (US 4,882,399) as applied to claim 26 above, and further in view of Marten et al (US 6,329,473).

The references as combined above fail to suggest incorporating a triazine derivative in the epoxy resin system.

As suggested by Marten et al, triazine derivatives are known latent hardeners employed in epoxy resins (Col. 10, lines 54 – 64).

It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to include a triazine derivative as an additional structural component to the epoxy resin of Cook in view of Marten et al suggesting to incorporate triazine derivatives in epoxy resins as a latent hardener.

10. Claims 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of Becker (US 4,125,522).

As to claim 42, in the exemplary embodiment of Cook, Cook teaches bonding shoe sole to shoe uppers. As evidenced for example by Becker, shoe soles are well known to comprise a variety of natural or synthetic or elastomeric materials (Col. 1, lines 21 – 25).

It would have been obvious to one of ordinary skill in the art at the time of the invention that the shoe sole as suggested in the exemplary embodiment of Cook comprise plastic as such shoe sole material is considered to be well known as evidenced for example by Becker and only the expected results would be achieved.

As to claim 44, as further evidenced by Becker, in shoe manufacturing it is well established to provide a production line. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the adhesive system disclosed by Cook in a production line as Cook suggests employing said adhesive system in bonding soles to shoe uppers and Becker is evidence that such bonding operations are known to be carried out in production lines for well established automated mass producing manufacturing benefits.

11. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 3,938,266) in view of (DE 92 16 278.9).

Cook teaches an adhesive system of high adhesive strength, whose bond may be selectively destroyed or weakened. Cook acknowledges that designers in many product fields have sought an adhesive having permanent strength characteristics yet whose bond may be destroyed without affecting more than a narrow zone encompassing the bonded area (Col. 1, lines 7 – 17). As an example of such a product field, Cook suggests the shoe art failing to suggest components of a motor vehicle.

DE 92 16 278.9 is evidence of reversible adhesives having use and being desirable in bonding components of motor vehicles.

It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to employ the adhesive system of Cook in bonding components of a motor vehicle in view of Cook suggesting the adhesive system is applicable to many product fields and DE 92 16 278.9 providing evidence of reversible adhesive systems being employed in bonding components of a motor vehicle.


As to claim 44 and a production line adhesive, while Cook does not positively suggest a production line in providing the adhesive system, in rendering obvious to employ the adhesive system in bonding components of motor vehicles as suggested in regard to claim 43, it would have been additionally obvious to one of ordinary skill in the art at the time of the invention to employ the adhesive system as a production line adhesive, as production lines for bonding components of a motor vehicle are taken to be well known, conventional per se, in the art, wherein said production lines offer the benefits of automated mass production.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Todd J. Kilkenny whose telephone number is (703) 305-6386, or if attempting to contact after December 22, 2004 (703) 272-1219. The examiner can normally be reached on Mon - Fri (9 - 5).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

TJK

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300

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